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### Dwyer Instruments 1223-16-D

# Dwyer Flex-Tube Series 1223 U-Tube Manometer Instruction Manual

Model: 1223-16-D

## 1. Introduction

This manual provides essential instructions for the safe and effective use of the Dwyer Flex-Tube Series 1223 U-Tube Manometer. This instrument is designed for accurate measurement of positive, negative, and differential pressures. Please read this manual thoroughly before installation and operation to ensure proper performance and longevity of the device.

## 2. Product Overview

The Dwyer Flex-Tube U-Tube Manometer combines the precision of a simple 'U' tube design with the durability of robust plastic construction. It features a flexible, shatter-proof clear acetate tubing for the column, which has an outer diameter of 0.375 inches. The indicating tube is backed by a white scale channel to enhance color contrast, and the scale itself is made from extruded impact-resistant polystyrene plastic, ensuring perfect alignment with the column. Black graduations and numbers are silk-screen printed on stark white scales for maximum readability.






Figure 1: Dwyer Flex-Tube Series 1223 U-Tube Manometer. This image displays the manometer with its clear U-tube, red gauge fluid, and

easy-to-read white scale with black markings.

## 3. Features

- Measures positive, negative, and differential pressures.
- Combines inherent accuracy of a 'U' tube with durable plastic construction.
- Reliable design withstands hard use.
- Provides accurate and highly visible readings.
- Easy access for maintenance and cleaning.
- Indicating tube backed by a white scale channel for maximum color contrast.
- Extruded impact-resistant polystyrene plastic scale for perfect column alignment.
- Stark white scales with silk-screen printed black graduations and numbers for enhanced readability.

## 4. Setup

### 4.1 Unpacking

Carefully remove the manometer from its packaging. Inspect the unit for any signs of damage that may have occurred during transit. If damage is found, contact your supplier immediately.

### 4.2 Mounting

The manometer should be mounted vertically on a stable surface. Ensure the mounting location is free from excessive vibration, extreme temperatures, or direct sunlight, which could affect accuracy. Use appropriate fasteners for secure installation.

### 4.3 Filling with Gauge Fluid

The manometer is designed to be used with red gauge fluid. Carefully pour the fluid into one of the tube openings until the fluid level reaches the desired zero mark on the scale. Ensure no air bubbles are trapped in the fluid column. The fluid level should be equal in both sides of the U-tube when no pressure is applied.

## 5. Operating Instructions

### 5.1 Connecting to Pressure Source

Connect the pressure source to the appropriate port(s) of the manometer using suitable tubing. For positive pressure, connect to one side. For negative pressure (vacuum), connect to the other side. For differential pressure, connect the higher pressure to one side and the lower pressure to the other.

### 5.2 Reading Measurements

Read the fluid level at the bottom of the meniscus. The difference in fluid levels between the two columns indicates the pressure. The scale is marked in inches of water column (WC). For example, if one side reads +4 and the other -4, the differential pressure is 8 inches WC.

### 5.3 Zero Adjustment

Before taking critical measurements, ensure the manometer is properly zeroed. With no pressure applied, the fluid levels in both columns should align with the zero mark. If not, gently adjust the manometer's position or add/remove a small amount of fluid until zeroed.

## 6. Maintenance

### 6.1 Cleaning

The clear acetate tubing and scale can be cleaned with a soft, damp cloth. Avoid using abrasive cleaners or solvents, as these may damage the plastic or markings. The manometer is designed for easy access to the tubing for cleaning.

### 6.2 Fluid Replacement

Over time, the gauge fluid may evaporate or become discolored. For optimal accuracy and readability, replace the fluid as needed. Use only the recommended red gauge fluid from Dwyer Instruments or an approved equivalent.

### 6.3 Storage

When not in use for extended periods, store the manometer in a clean, dry environment, away from direct sunlight and extreme temperatures. Ensure the ports are covered to prevent dust or debris from entering the tubes.

## 7. Troubleshooting

- **Inaccurate Readings:** Check for proper vertical alignment, ensure no air bubbles are present in the fluid, and verify the fluid level is correct. Ensure the manometer is zeroed before use.
- **Fluid Leakage:** Inspect all connections and tubing for cracks or loose fittings. Replace any damaged components.
- **Difficulty Reading Scale:** Ensure the scale and tubing are clean. Replace discolored fluid if necessary. Ensure adequate lighting.

## 8. Specifications

| Parameter | Value |
|---|---|
| Manufacturer | Dwyer Instruments |
| Part Number | 1223-16-D |
| Measurement Range | 8-0-8" WC (inches Water Column) |
| Fluid Type | Red Gauge Fluid |
| Column Outer Diameter | 0.375 inches |
| Construction Material | Flexible, shatter-proof clear acetate tubing; Impact-resistant polystyrene plastic scale |
| Item Weight | 431 g (approximately 0.95 lbs) |
| Package Dimensions | 76.2 x 11.43 x 2.54 cm (approximately 30 x 4.5 x 1 inches) |
| Batteries Required | No |

## 9. Warranty and Support

For warranty information and technical support, please refer to the official Dwyer Instruments website or contact their customer service department. Keep your purchase receipt as proof of purchase for any warranty claims.

**Contact Information:**

- **Manufacturer:** Dwyer Instruments, Inc.
- **Website:** www.dwyer-inst.com (Please visit for the most current contact details and support resources.)

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